**ABSTRACT**:

The present invention comprises a system and method for pseudo-tunneling voice communications over a telecommunications network to preserve the quality of the voice call and reduce degradation due to tandemming loss. The pseudo-tunneling

5   of the present invention comprises processing and routing voice packets as data packets. A voice packet is pseudo-tunneled by setting a pseudo-tunneling flag in the voice packet. The pseudo-tunneling flag provides an indication to network devices that the voice packet should be processed and routed like a data packets. Alternatively, one or more voice packets can be encapsulated in a routing packet for

10  routing across a packet switched data network. The routing packet is pseudo-tunneled by setting a pseudo-tunneling flag in the header of the routing packet. Pseudo-tunneled vocoder frames are not converted into PCM or any other decompressed waveform representation of the voice signal, thereby avoiding tandemming loss and preserving bandwidth.

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